COMBUSTION AND FLAME

THE JOURNAL OF THE COMBUSTION INSTITUTE

VOLUME 75 1989

Contents

P. T. WILLIAMS, M. K. ABBASS, G. E. ANDREWS, and K. D. BARTLE (Leeds, England)
Diesel Particulate Emissions: The Role of Unburned Fuel 1
P. H. STEWART, C. W. LARSON, and D. M. GOLDEN (Menlo Park, CA)
Pressure and Temperature Dependence of Reactions Proceeding Via a Bound Complex. 2. Application to $2CH_3 \rightarrow C_2H_5 + H$ 25
J. O. KELLER and T. T. BRAMLETTE (Livermore, CA), J. E. DEC (Ann Arbor, MI), and C. K. WESTBROOK (Livermore, CA)
Pulse Combustion: The Importance of Characteristic Times 33
J. B. A. MITCHELL and D. J. M. MILLER (London, Ontario, Canada)
Studies of the Effects of Metallic and Gaseous Additives in the Control of Soot Formation in Diffusion Flames 45
W. PRINS, R. SIEMONS, and W. P. M. VAN SWAAIJ (Enschede, The Netherlands), and M. RADNOVANOVIC (Beograd, Yugoslavia)
Devolatilization and Ignition of Coal Particles in a Two-Dimensional Fluidized Bed 57
EZRA BAR-ZIV (Beer Sheva, Israel), DANIEL B. JONES, R. ERIK SPJUT, DAVID R. DUDEK, ADEL F. SAROFIM, and JOHN P. LONGWELL (Cambridge, MA)
Measurement of Combustion Kinetics of a Single Char Particle in an Electrodynamic Thermogravimetric Analyzer 81

Brief Communication

XIAO-JING WANG (Brussels, Belgium)
Chaotic Oscillations of Cool Flames 107

R. STARKE and P. ROTH (Duisburg, West Germany)
An Experimental Investigation of Flame Behavior During Explosions in Cylindrical Enclosures with Obstacles 111
YUTAKA TANAKA (Okayama, Japan)
Numerical Simulations for Combustion of Quiescent and Turbulent Mixtures in Confined Vessels 123
S. Y. HO and C. W. FONG (Salisbury, Australia)
Relationship Between Impact Ignition Sensitivity and Kinetics of the Thermal Decomposition of Solid Propellants 139
SEUNG WOOK BAEK and CHAN LEE (Seoul, Korea)
Heat Transfer in a Radiating Medium Between Flame and Fuel Surface 153
T. C. CHEW, R. E. BRITTER, and K. N. C. BRAY (Cambridge, England)
Laser Tomography of Turbulent Premixed Bunsen Flames 165
S. A. LAWTON (St. Louis, MO)
The Effect of Sulfur Dioxide on Soot and Polycyclic Aromatic Hydrocarbon Formation in Premixed Ethylene Flames 175
S. R. TURNS, M. J. FUNARI, and A. KHAN (University Park, PA)
In Situ Measurements of Oxide Particles in Boron-Containing Diffusion Flames 183
R. K. KUMAR (Pinawa, Canada)
Ignition of Hydrogen–Oxygen-Diluent Mixtures Adjacent to a Hot, Nonreactive Surface 197
PETER J. LIPOWICZ and SIMON J. ROTHENBERG (Albuquerque, NM)
The Density of Smoke Droplets Produced by Thermal Degradation of Organic Solids 217

TAKEYUKI KAMIMOTO, MYURNG-HOAN BAE, and HARUKI KOBAYASHI (Tokyo, Japan)
A Study on Soot Formation in Premixed Constant-Volume Propane Combustion 221
E. GUTMARK, T. P. PARR, D. M. HANSON-PARR, and K. C. SCHADOW (China Lake, CA)
Azimuthal Structure of an Annular Diffusion Flame 229
R. H. RANGEL and W. A. SIRIGNANO (Irvine, CA)
Combustion of Parallel Fuel Droplet Streams 241
SEUNG WOOK BAEK and SUNGPYO SEUNG (Seoul, Korea)
On the Postshock Flow Field of Carbon Particle Laden Gases 255
PAUL A. LIBBY (La Jolla, CA), NORBERT PETERS (Aachen, F.R.G.), and
FORMAN A. WILLIAMS (Princeton, NJ)
Cylindrical Premixed Laminar Flames 265
F. MEÑDEZ and C. TREVIÑO (Mexico City, Mexico) and A. LIÑÁN (Madrid, Spain)
Transient Analysis of Carbon Combustion in Stagnation Flow 281
I. O. MOEN (Alberta, Canada), D. BJERKETVEDT, T. ENGEBRETSEN, and
A. JENSSEN (Oslo, Norway), and B. H. HJERTAGER and J. R. BAKKE (Bergen, Norway)
Transition to Detonation in a Flame Jet 297
S. H. CHUNG (Seoul, Korea) and C. K. LAW (Davis, CA)
Analysis of Some Nonlinear Premixed Flame Phenomena 309
F. J. HIGUERA and A. LIÑÁN (Madrid, Spain) and C. TREVIÑO (Aachen, F. R.G.)
Heterogeneous Ignition of Coal Dust Clouds 325
M. B. COLKET III and D. J. SEERY (East Hartford, CT) and
H. B. PALMER (University Park, PA)
The Pyrolysis of Acetylene Initiated by Acetone 343
SATORU ISHIZUKA (Saitama, Japan)
An Experimental Study on Extinction and Stability of Tubular Flames 367
T. J. SNEE (Buxton, England) and J. F. GRIFFITHS (Leeds, England)
Criteria for Spontaneous Ignition in Exothermic, Autocatalytic Reactions: Chain Branching
and Self-Heating in the Oxidation of Cyclohexane in Closed Vessels 381
ALAN R. KERSTEIN (Livermore, CA)
Linear-Eddy Modeling of Turbulent Transport. II: Application to Shear Layer Mixing 397

Brief Communications

H. O. PRITCHARD (Downsview, Canada)
Thermal Decomposition of Isooctyl Nitrate 415
TADEUSZ J. RYCHTER (Warsaw, Poland)
Multipoint Ignition by Flame Dispersion 417